

### **Remarks**

Claim 1 has been amended to incorporate claim 4 and claim 4, accordingly, canceled. Polysaccharides according to claim 1 have reduced ketone functionalities as described in the specification.

Claim 31 has been amended to recite that the pneumococcus type 5 capsular polysaccharide is subject to reduction of the ketone functions and aldehyde functions and fragmented before reductive amination (i.e., referred to in the specification as the second method according to the invention). Support can be found, for example, on p. 7, ll. 19-35, and p. 8, ll. 27-35, and p. 19, l. 9, to p. 20, l. 29, of the specification.

Subject matter comprising embodiments in which the ketone functions are not reduced have been removed from the pending claims without prejudice to future prosecution and without acquiescence to any rejection. The applicants maintain that the previously pending claims are patentable over the cited art for the reasons of record.

### **Rejection of claims under 35 U.S.C. § 102**

The Office maintained its rejection of claims 1, 2, 5-7, 9, 10, 30, and 31 as anticipated under 35 U.S.C. 102(b) by Moreau. The applicants respectfully traverse.

Claim 1 recites polysaccharides in which the ketone functions have been reduced (such as are produced according to the second method of the invention). Moreau does not teach pneumococcus type 5 capsular polysaccharides in which the ketone functions are reduced prior to reductive amination. Hence, Moreau cannot anticipate the present claims, and the applicants respectfully request reconsideration and withdrawal of this rejection.

### **Rejection of claims under 35 U.S.C. § 103**

The Office maintained the rejection of 1-10, 30, and 31 as obvious over Moreau in view of Jansson. For the following reasons, the applicants respectfully traverse.

The present claims are directed to pneumococcus type 5 capsular polysaccharide, conjugates and compositions comprising them in which the ketone functions of the polysaccharide have been subject to reduction. The cited art provides no teaching, suggestion, motivation, or reason to subject pneumococcus type 5 capsular polysaccharide to conditions for reduction of ketone moieties prior to coupling the polysaccharide to a polypeptide carrier by reductive amination. The applicants were the first to discover that the chemical structure of the

pneumococcus type 5 capsular polysaccharide repeating unit is modified by reductive amination (specification p. 5, l. 18, *et seq.*). Without this understanding there would be no reason to reduce the ketone functions prior to reductive amination, as presently claimed. Furthermore, absent a compelling reason, the ordinary artisan would avoid introducing additional synthetic steps to avoid increased time and costs for conjugate preparation and reduced yield.

In view of the foregoing amendments and remarks, the applicant submits that the claims are in condition for allowance, which is respectfully solicited. If the examiner believes a teleconference will advance prosecution, he is encouraged to contact the undersigned as indicated below.

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Respectfully submitted,

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